



P.O. Box 226 • Seneca, KS 66538 • 785/336-3760
FAX 785/336-2751 • <http://www.krwa.net>

June 29, 2009

Larry Horn
City of Green
P.O. Box 25
Green, KS 67447

RE: Operator in Training (OIT) Visit

Dear Larry;

This letter is in follow-up to my on-site visit with you June 16, 2009, to discuss public water supply system operations. Our discussion was basically a review of routine operation responsibilities and requirements such as: (1) measuring and recording daily chlorine residuals; (2) following a bacteriological sample siting plan when collecting samples; (3) following a line flushing program; and (4) implementing a valve exercising program.

Daily chlorine residual monitoring: All public water supplies are required to measure chlorine residuals in the distribution system on a daily basis. The results of the test along with the date, time, and location must be maintained in a manner to assure compliance with the Kansas Department of Health and Environment (KDHE) minimum requirements. These records normally do not need to be submitted to the KDHE but will be reviewed by the agency's field staff during their routine sanitary surveys of your public water system. KDHE regulations require a minimum chlorine residual of 0.2 mg/l be maintained in systems such as yours using free chlorine. It was noted that Larry is conducting daily chlorine residual tests from locations on the distribution system and maintaining a record of the results as required by the KDHE.

Bacteriological siting plan: KDHE regulations require a representative sampling plan. As a result, KDHE has developed a guidance procedure that suggests you prepare a plan by dividing your distribution system into two zones. Five sampling locations should be selected in each zone. Finally, one sample should be collected from each zone during each month, rotating through the sites until all have been sampled during the year.

Well Pump Operation: Due to the high nitrate level in the south wells, the city is operating the newest well (west well) exclusively. This well is operated manually with on-off operation requiring the operator to be available at those times. It would be much more convenient and would allow the operator more flexibility in completing his daily tasks if some level of automatic controls was installed. At the very least, the city could continue with manual control to turn-on the well pump but a pressure actuated control switch could be installed to shut-off the pump when the water level reaches a predetermined level in the elevated storage

tank. This would minimize any chance of the elevated tank overflowing if or when the operator should fail to turn off the well at the appropriate time.

Routine flushing of the distribution system mains: At the present time, flushing of the distribution system is being done as a part of the elevated tank cleaning and painting process. The pressure relief valve that is installed on a fire hydrant is allowing the system to be flushed and chlorine residuals have improved considerably as a result. It is important that the distribution system mains be flushed on a routine basis. Many systems flush twice per year; however, the frequency of flushing can vary from system to system. Line flushing is good policy as it helps keep the lines clean and will bring fresh chlorinated water into areas that may be low in residual chlorine from time to time. It should be noted that many systems across the state have experienced some difficulty in maintaining minimum residuals due to inadequate mixing of the water in elevated storage tanks. We recommend you pay close attention to areas of low flow and dead end mains and flush as needed to maintain adequate residuals. In fact, Larry stated a desire to obtain a pressure relief valve for this purpose. Also, a meter could be attached to the valve to account for any water used in flushing.

Locating and exercising valves: Valves should be exercised on a routine basis to insure operation when needed. It is important that as little of the distribution system as possible be shut down when repairs are needed. The chance of contamination is greatly increased during times when there is little or no pressure on the system. Valves, located in key locations that operate when needed, will affect only a minimum number of customers when line repairs are performed.

Operator certification: The level of certification needed at Green is small systems (SS) and the experience requirement is six months. To assist you with the operation of your water system and prepare to take the certification examination, the following materials were provided during this visit: “The Operator’s Handbook” prepared by KRWA, the “Operator’s Companion” prepared by the Blue Book company, and copies of water treatment and distribution system study guides. Finally, we encourage you to take advantage of the various training opportunities held across the state and the online quiz section on the KRWA website. To locate the online quiz section, go to www.krwa.net/quiz/.

Funding for the above assistance was provided through a contractual arrangement between the Kansas Department of Health and Environment (State Revolving Loan Program set-aside) and the Kansas Rural Water Association (KRWA). Please call the KRWA if we can be of further assistance. Also, visit the KRWA website www.krwa.net for news and information concerning water and wastewater utilities, training opportunities, and other KRWA programs.

Sincerely,

Delbert C. Zerr
Consultant

C: Josh Wiedmer, Mayor Pro Tem
Vickie Wessel, KDHE, Topeka
Marsha Carpenter, KDHE, Salina